

Figure 1

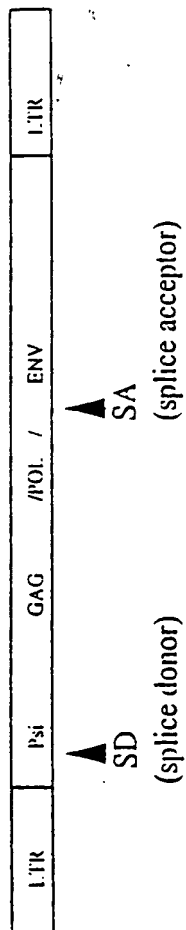


Figure 2

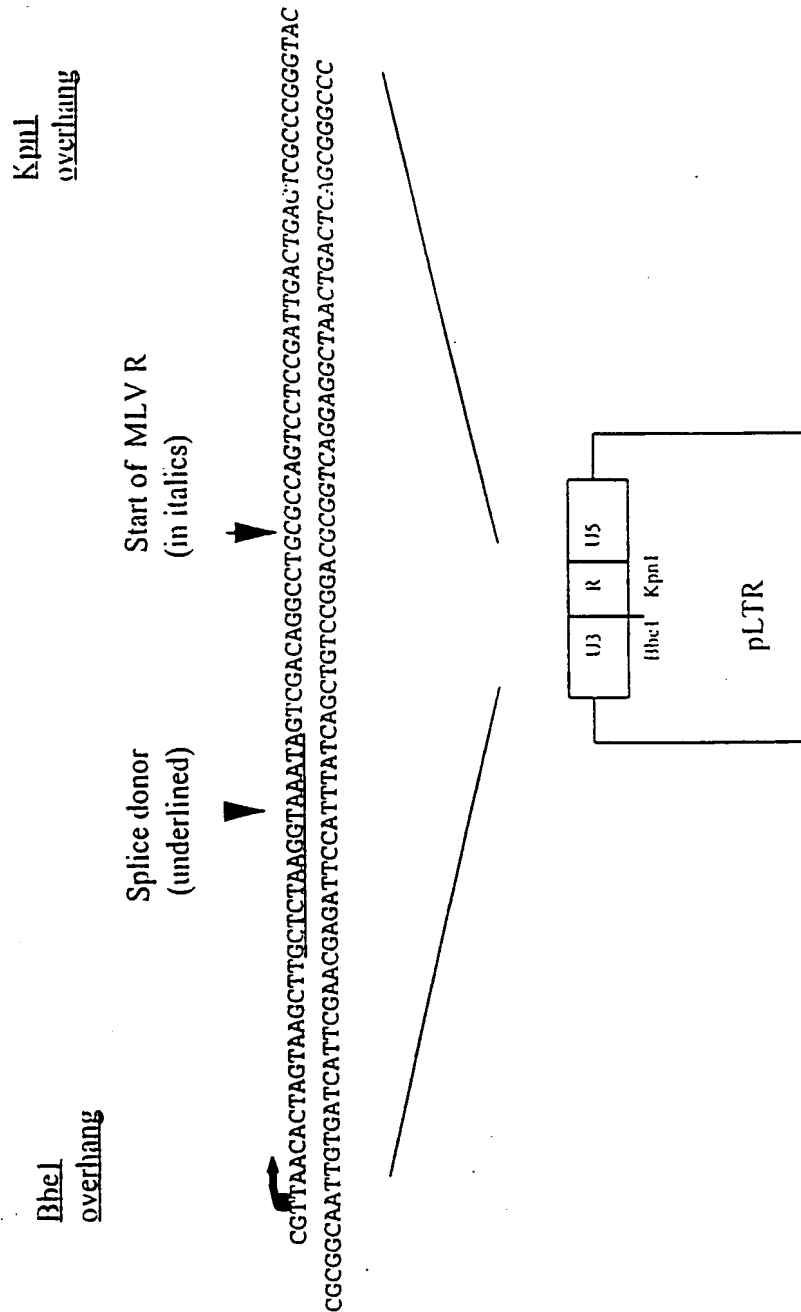
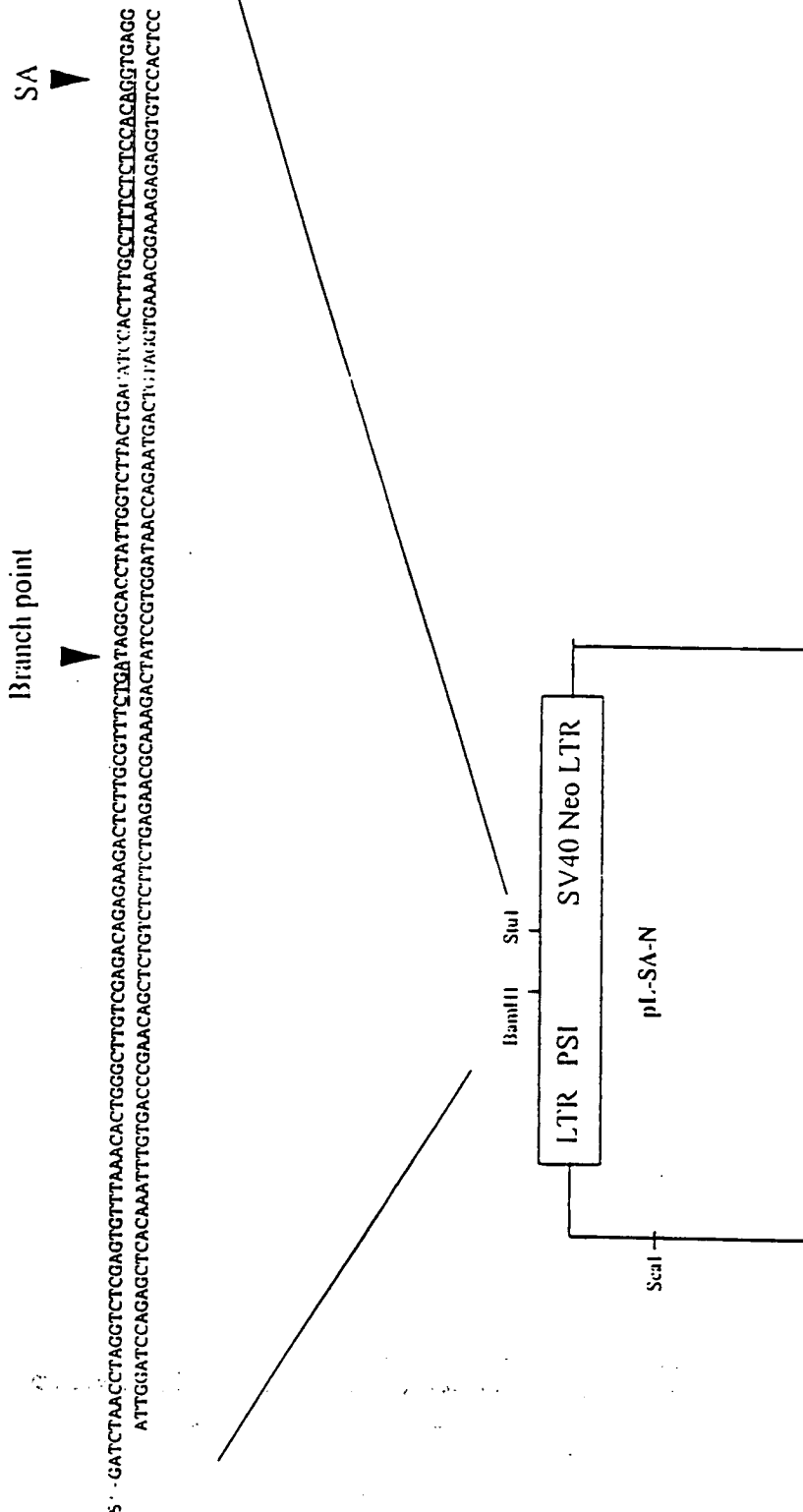
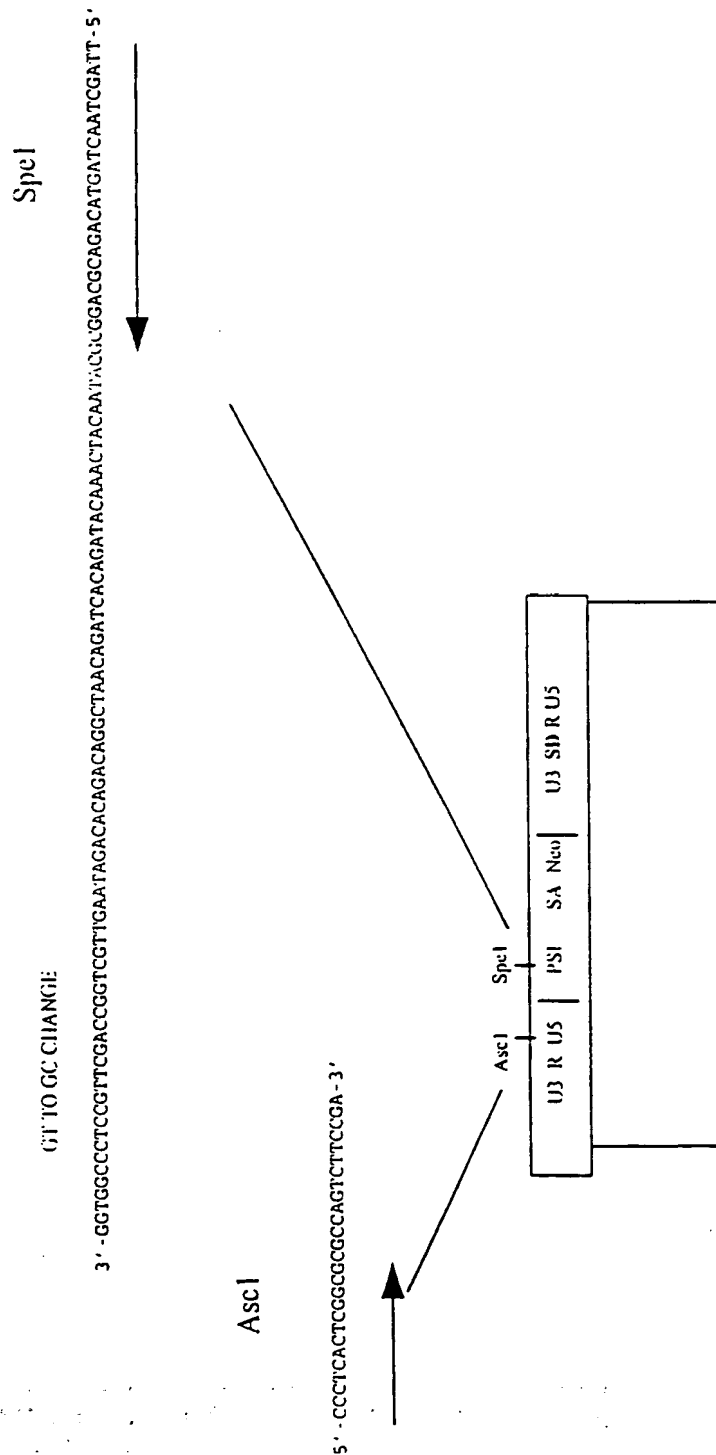


Figure 3



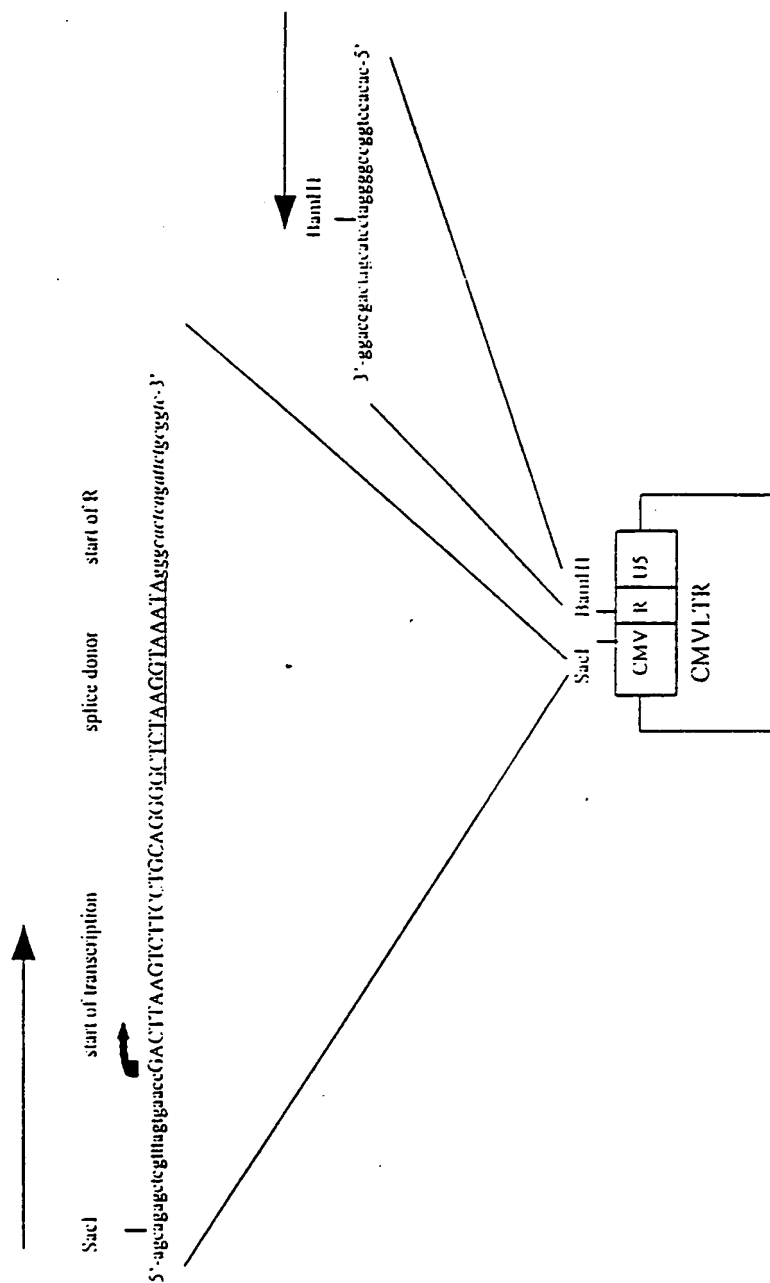
4/34

Figure 4



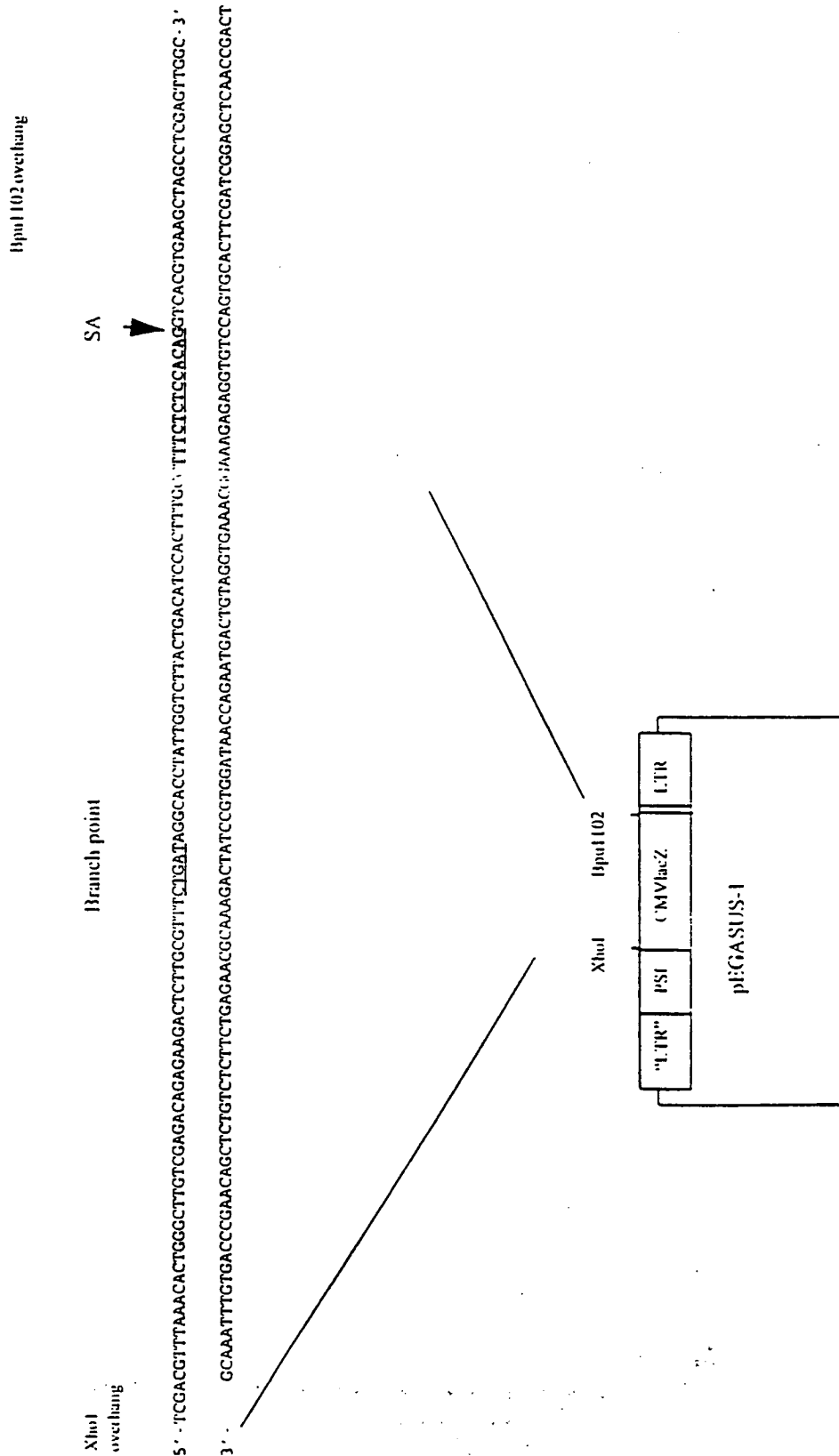
[illegible]

**Figure 5**



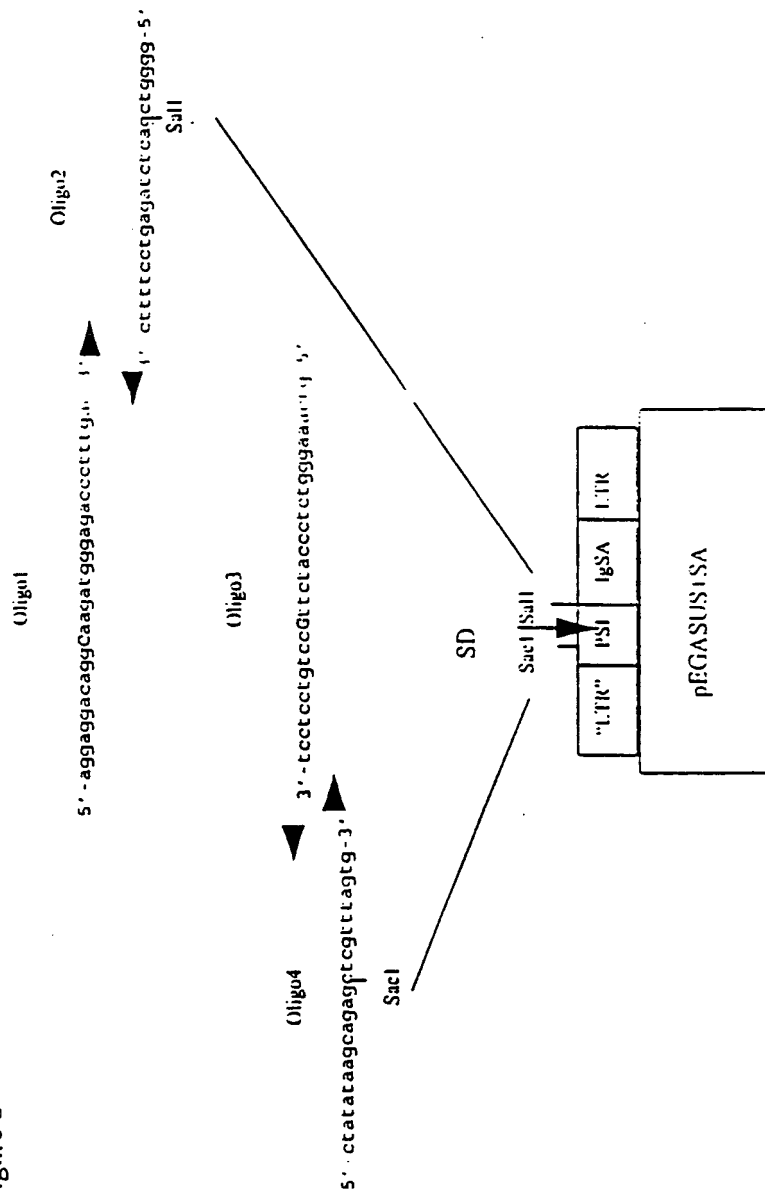
7/34

Figure 7



8/34

Figure 8





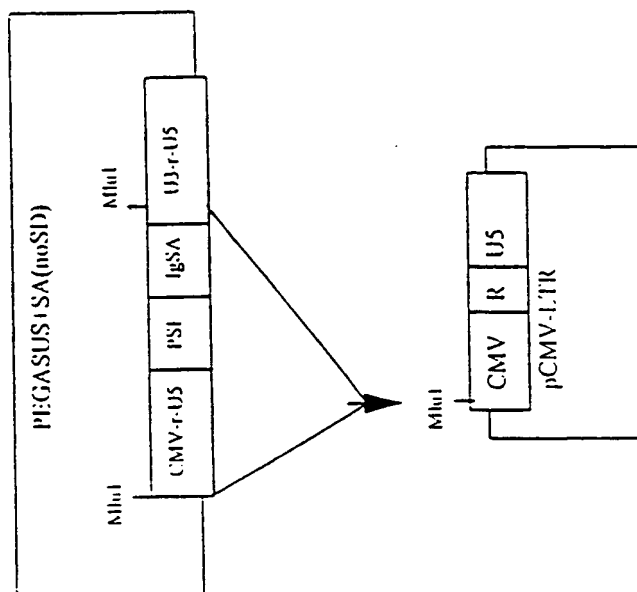
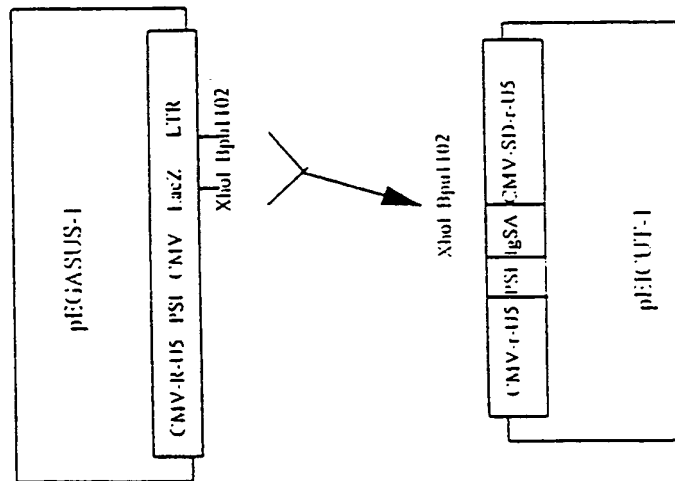


Figure 9

10/34

Figure 10





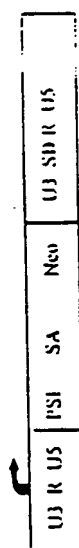
[illegible]

13/34

Figure 12

(A) pICUT vector in transfected cells

start of transcription



(B) pICUT vector in transduced cells

start of transcription

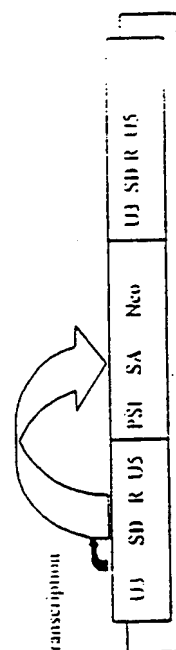
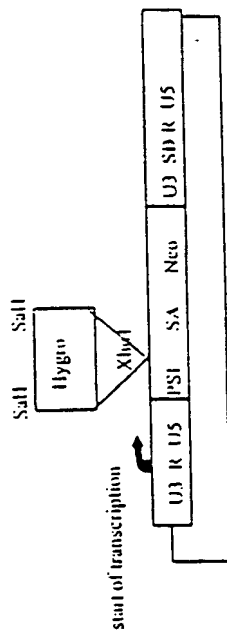


Figure 13

(a) Vector configuration in transfected cells



(B) Vector configuration in transduced cells

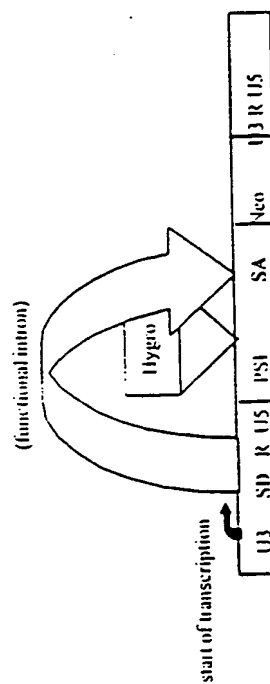
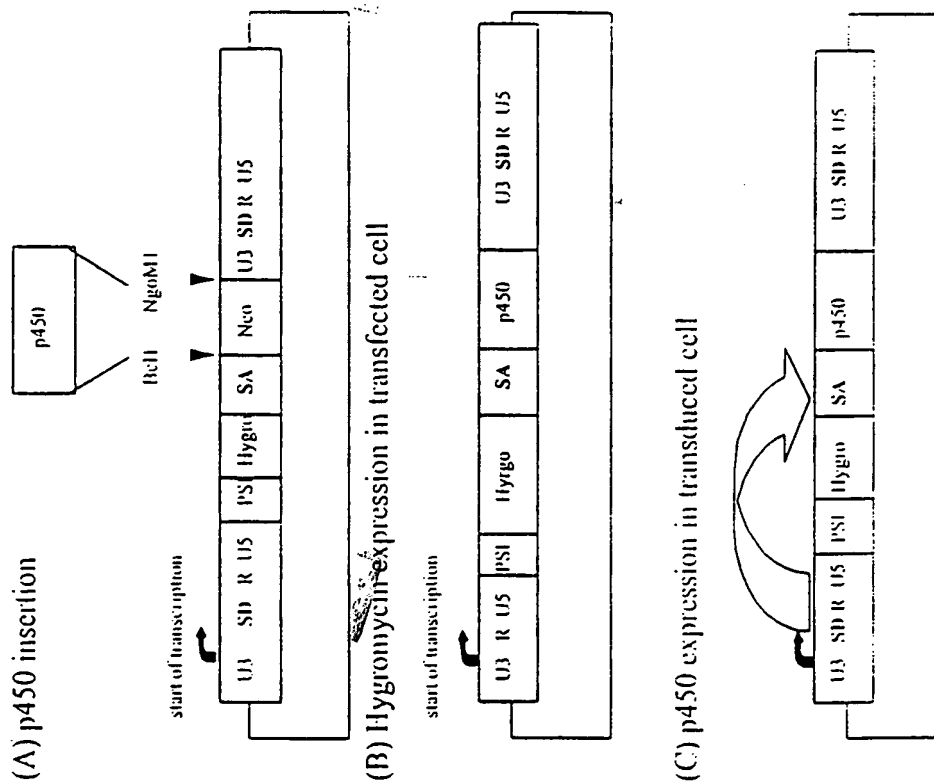


Figure 14



16/34

Figure 15

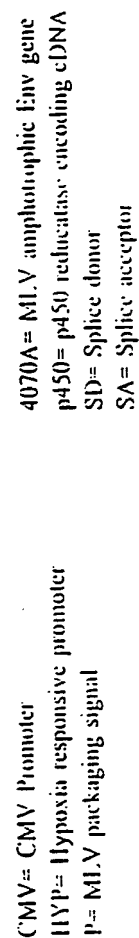
3' end of pol      5' -ATG CGT TCA ACG CTC TCA AAA CCC ("T" AAA AAT AAG  
 5' altered 4070A    5' -ATG GCC AGA AGC ACC CTG AGC AAG ("A CCC CAG GAC  
  
 GTT AAC CCG CGA GGC CCC CTA ATC CUC-3'  
 AAA AAT CCC TGG AAA CCT CTG ATC CTC-3'



17/34

Figure 16

ATGGCCAGAA GCACCTGAG CAAACCAACC CAGGACAAAA TCATCCCTG GAACTCTTG  
 ATGTCATGAG GAGTCTGTT AGGATAGGG ATGACAGAGA GCGCCCATC AGTTC  
 TTTAATGTAA CTTGGAGAGT CACCAACCTG  
 ATGACTGGGC GTACCCCAA TGCACCTCC CTCTGGGAA CTGTACAAGA TGCTTTCTA  
 AAATTATAT TGTGCTATG TGTCTGCTC GGAGAGGAGT GCGACCTTC AGACCAAGAA  
 CCGTATGTC GGTATGCTG CAATACCCC GAGGAGAGC AGCGACCCG GACTTTTGAC  
 TTTTACGTGT GCGCTGGGA TACCGTAAAG TCGGGGTGT GGGGACCCAG AGAGGGCTAC  
 TGTGTAAAT GCGGTGTGA ACCACCGGA CAGCTTACT GGAAGCCAC ATCTCTGTC  
 GACTTAATCT CCGTTAAGTG CGTACACCC CCTGGGACA CCGGATGCTC TAAAGTGTG  
 TGTGCCCCCT GCTACGACCT CTCCAAGTA TCCAATTCT TCCAAGGGC TACTCAGAG  
 GGCAGATGA ACCCTCTAGT CTAGATTC ACTGATGCG GAAAAAGGC TACTGCGAC  
 GGGCCCAAT COTGGGACT GAGCTGTAC CGACAGGAA CAGATCCTAT TACCATGTC  
 TCCCTGACCC GCGGTGCT TATGTGGGA CCGGAGTCC CCGTAGGGC CAACCCAGTA  
 TTACCCGACC AAGACTCCC TTCTCACCA ATACAGATTG TACCGCTCC ACAGCCACT  
 AGCCCCCTCA ATACCAGTTA CCCCCCTTC ACTACCACTA CACCTCAAC CTCCCTATA  
 AGTCAAGTG TCCACAGCC ACCCCAGGA ACTGGAGTA GACTACTAGC TCTAGTCAAA  
 GGAGCTATC AGCGCTTA CCTCACCAAT CCGACAGA CCAAGATG TTGGCTGTG  
 TTAGTGTGG GACTCTCTA TTACGAGGA GTAGCGTGC TGGCAGCTTA TACCAATAT  
 TCCACCGTC GGGCNACTG TAGGCCACT TCCACATA AGCTTACCT ATCTGAGTG  
 ACAGACAGG GCTATGCT GGGGGAGTA CTTAAACTC ACCAGGCTT ATGTAACAG  
 ACCAAAGG GGGCTCAGG ATCTACTAC ACCAGGTGC TCACTCTAC CACAGATTAT  
 TGCAGACTG GATTACTCC CTGCTGTCC ACCAGGTGC TCACTCTAC CACAGATTAT  
 TGTGTATTAG TGAACCTG GCCAGAGTA ATTACCACT CCGCGGCTT ATGTAACAG  
 CAGCTGAAC AGCTACCAA ATATAAGA GAGCAGTAT CATTGACCT GCGCTCTTA  
 CTAGGAGAT TAACCATGG AGGATGCA GCTGGAATAG GAGCGGAC CACTGCTTA  
 ATTAAGCCC AGCAGTTGA GCAGTTTCA GCGCTATCC AGACAGCT CAACGAGTC  
 GAAAGTCNA TTACCAACT AGAAAGTCA CTGACCTGT TGTCTGAGT AGCTCTACG  
 AACCGCAG GCTAGATT GCTATTCCTA AAGAGGGAG GTCTCTGCG AGCCCTAAA  
 GAGAATGTT GTTTTATCC AGACACAG GGTCTAGTA GAGACAGCAT GCGCAATTA  
 AGAGAAAGG TATACAGAG ACAAACTA TTTGAGACAG GCAAGGATG GTTCAGAGG  
 CTGTTTATA GATCCCCCTG GTTACCACC TTAATCTCA CCATCATGGG ACCTCTATA  
 GTACTCTAC GATCTTACT GTTGGACCT TGCATTCTCA ATCATCTGT CAATTTCT  
 AAGACAGGA TCTATGTT CCGGCTCTG GTTTTACTC AGCAATATC CTAGTAAA  
 CCGATAGAT AGAGCCCATG A



19/34

Figure 18

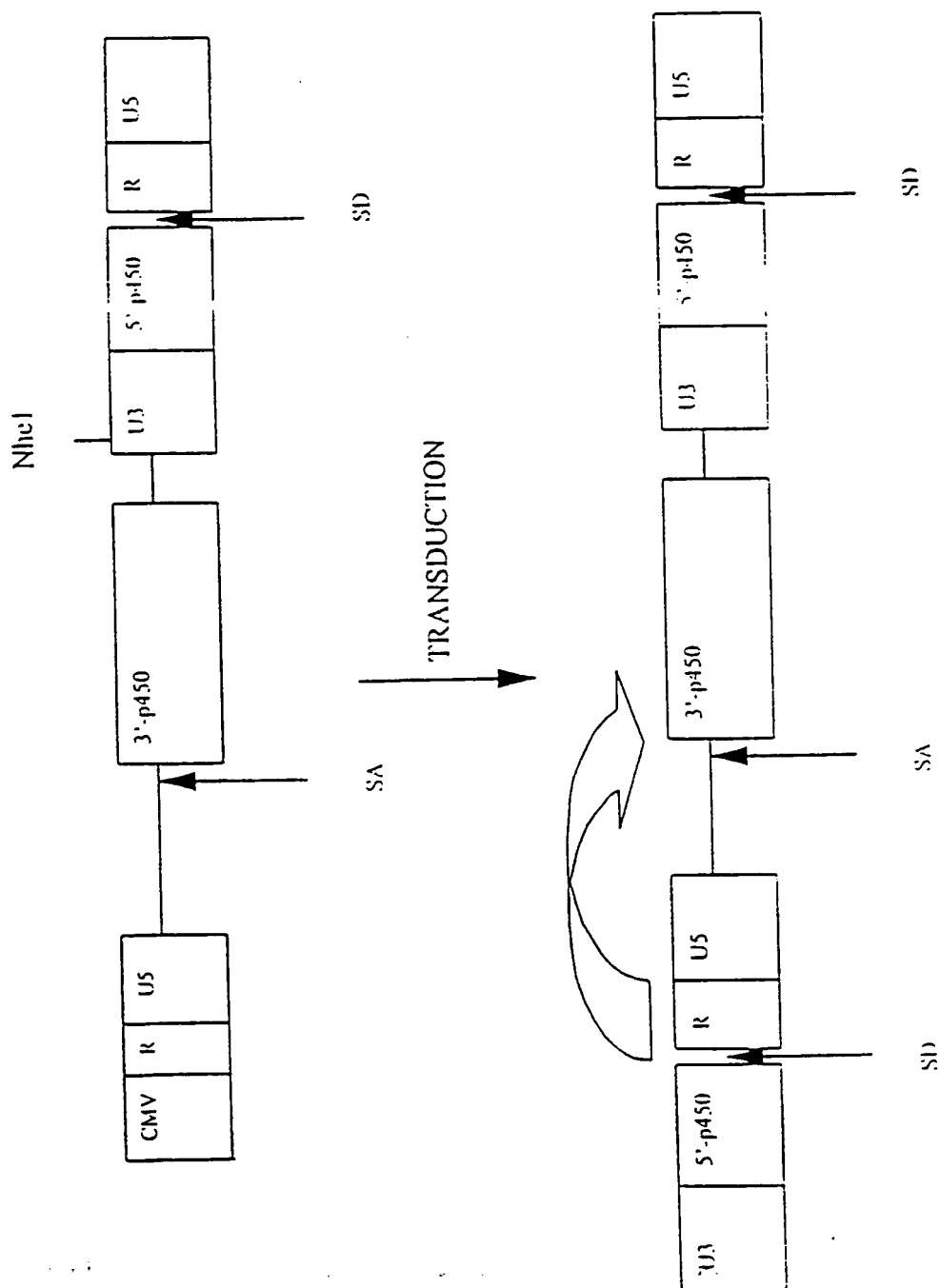
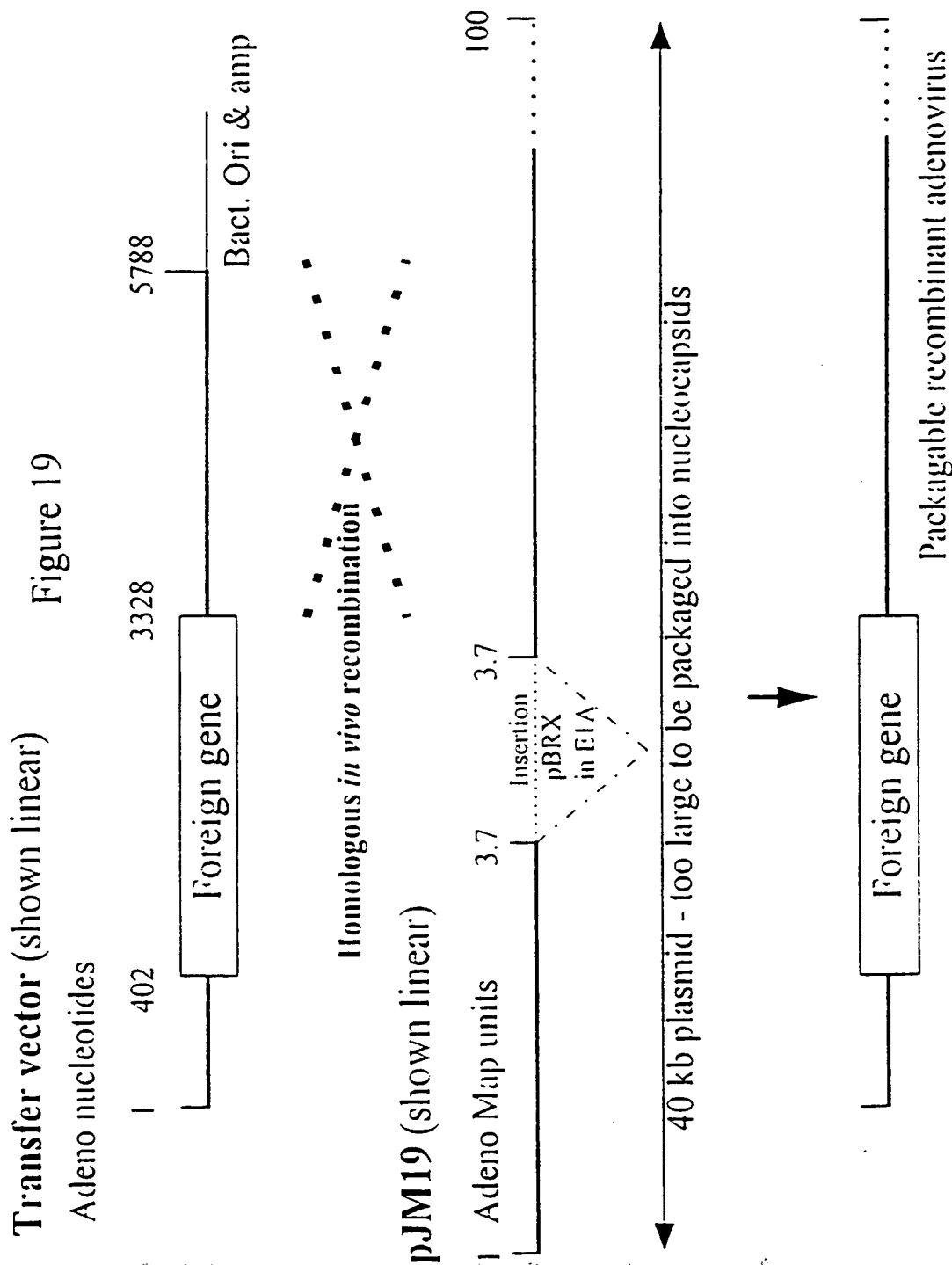


Figure 19



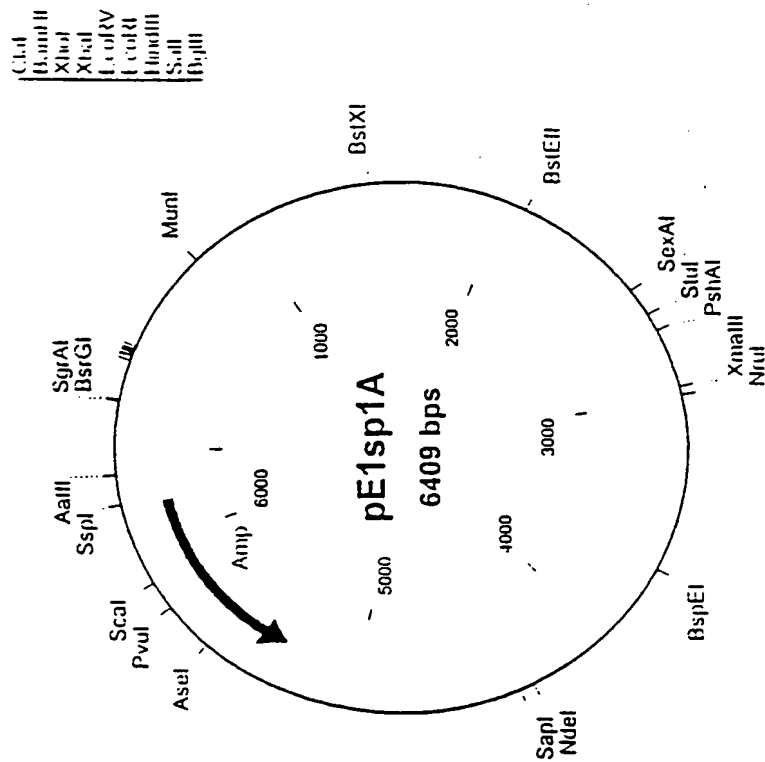


Figure 20

22/34

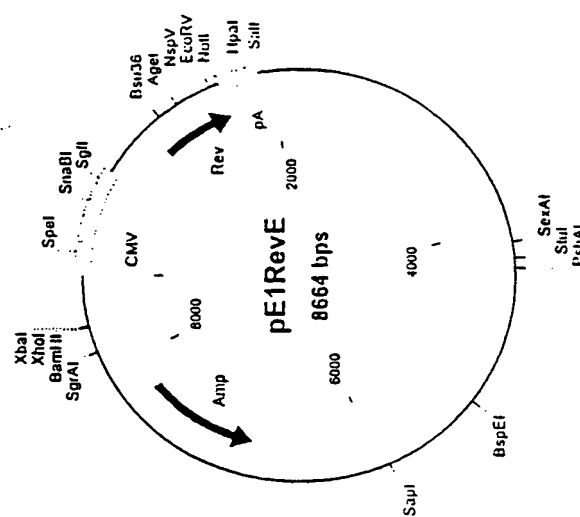
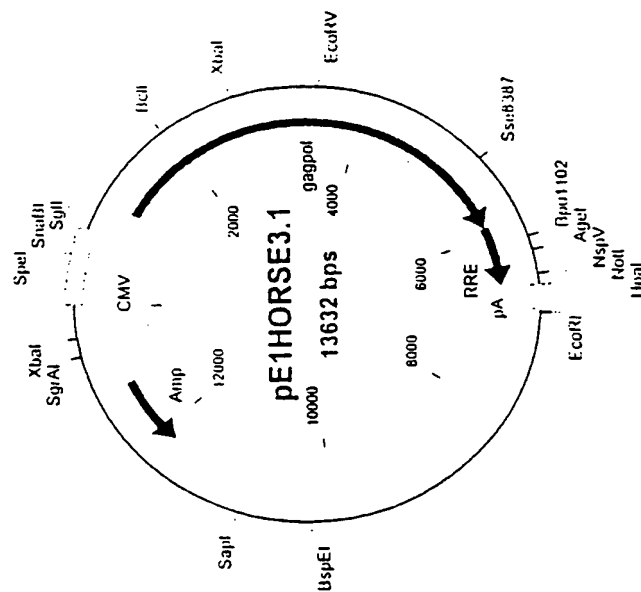


Figure 21



24/34

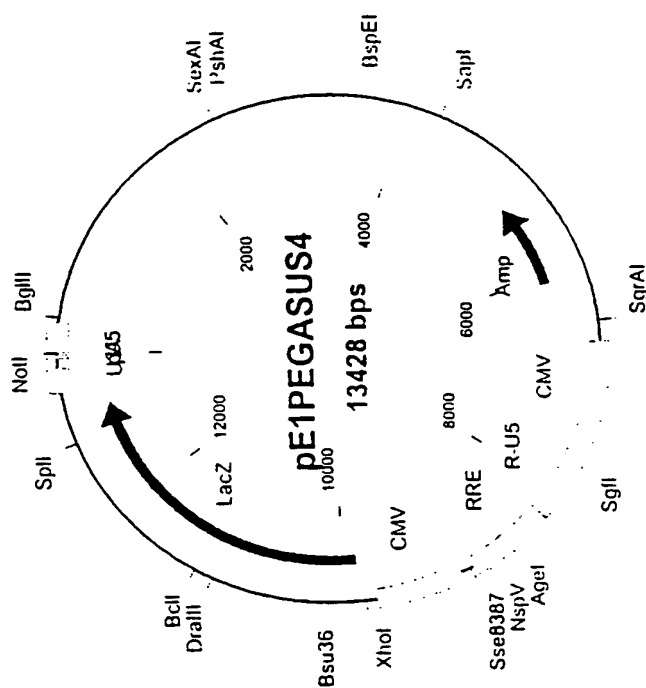


Figure 23



25/34

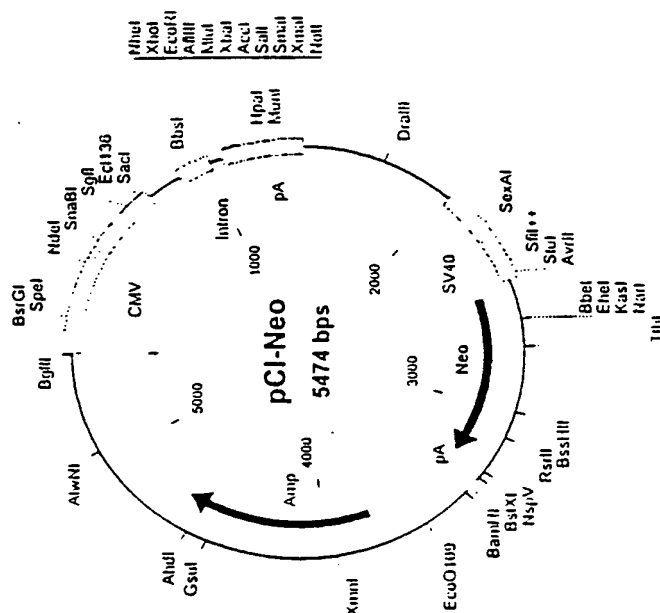


Figure 24

26/34

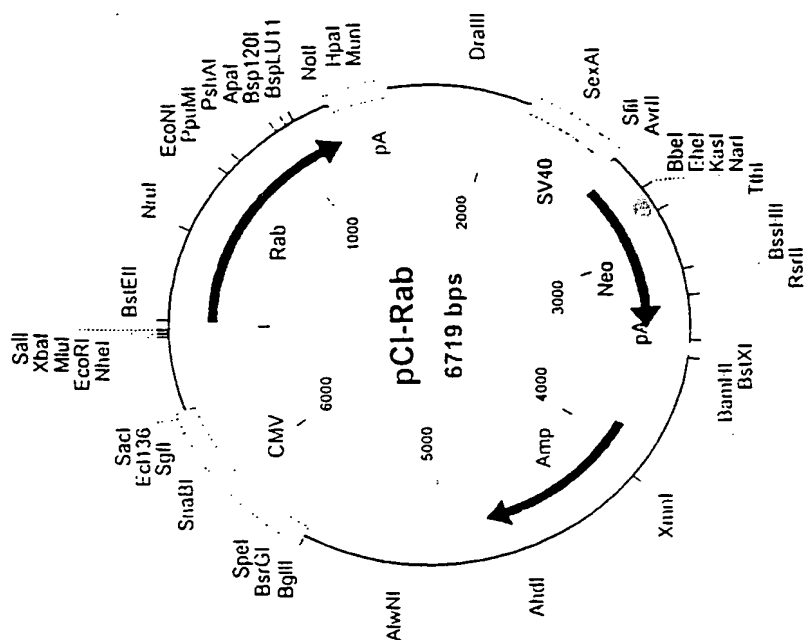


Figure 25

27/34

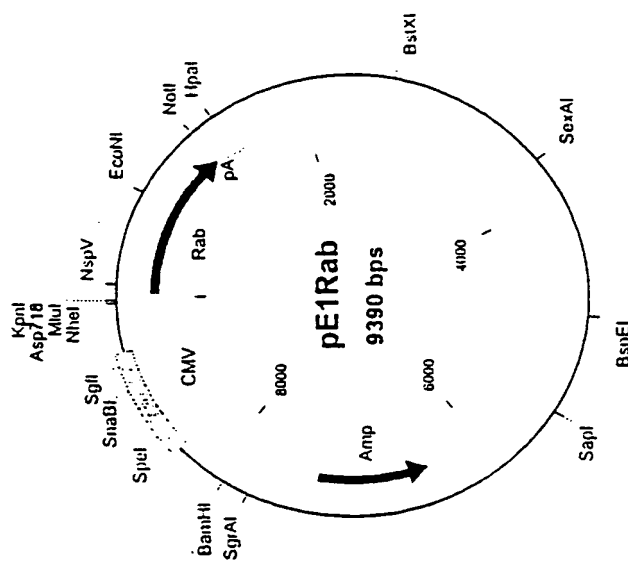


Figure 26

Figure 27a

A) Natural splicing configuration

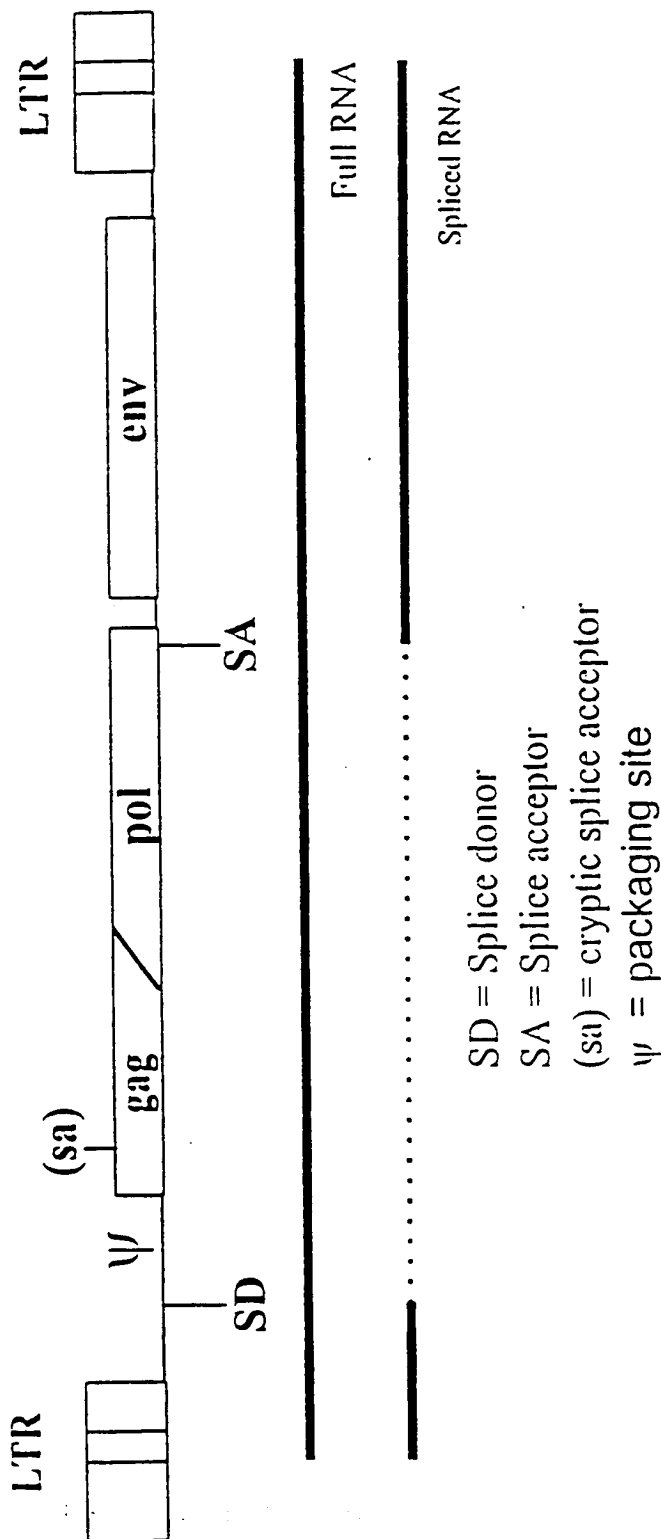
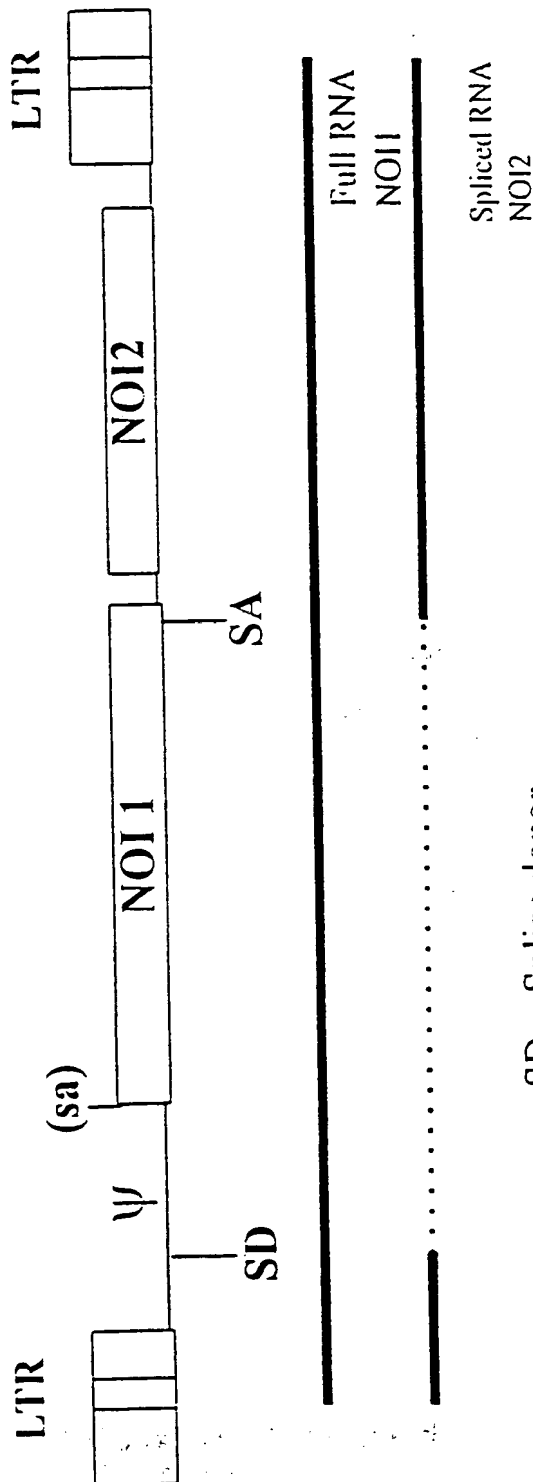


Figure 27b

Splicing configurations in known vectors

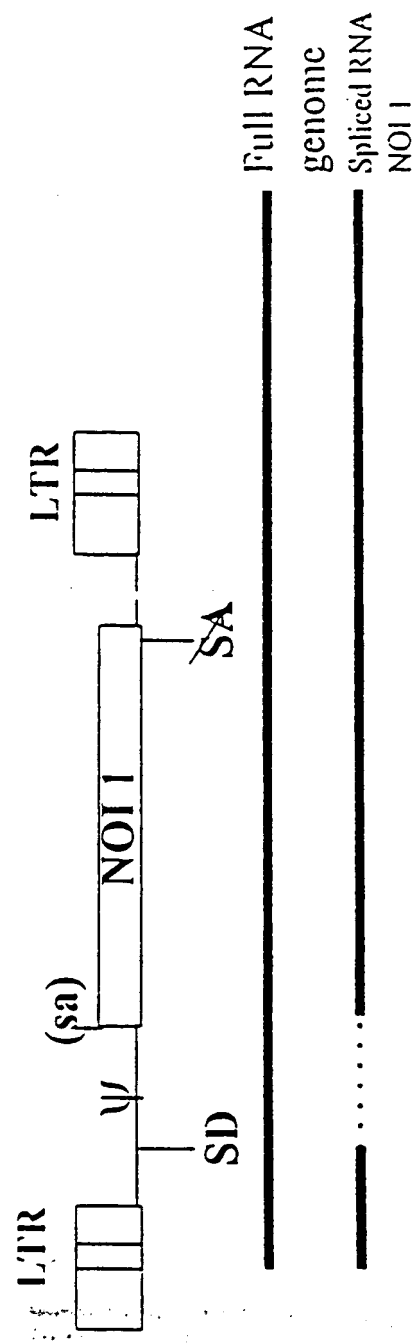
e.g. LTRSVX



SD = Splice donor  
 SA = Splice acceptor  
 (sa) = Cryptic splice acceptor  
 $\psi$  = packaging site

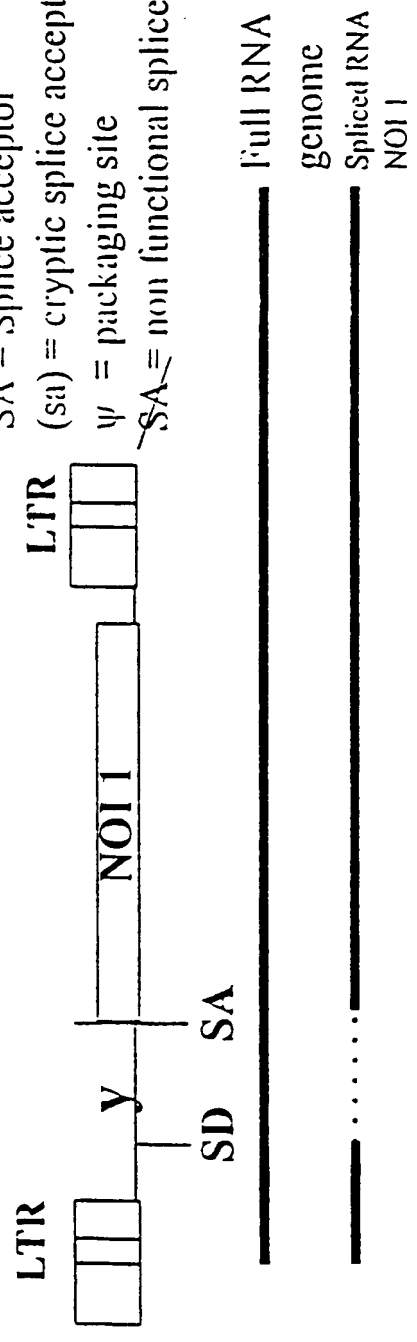
Figure 27b cont:

e.g. N2



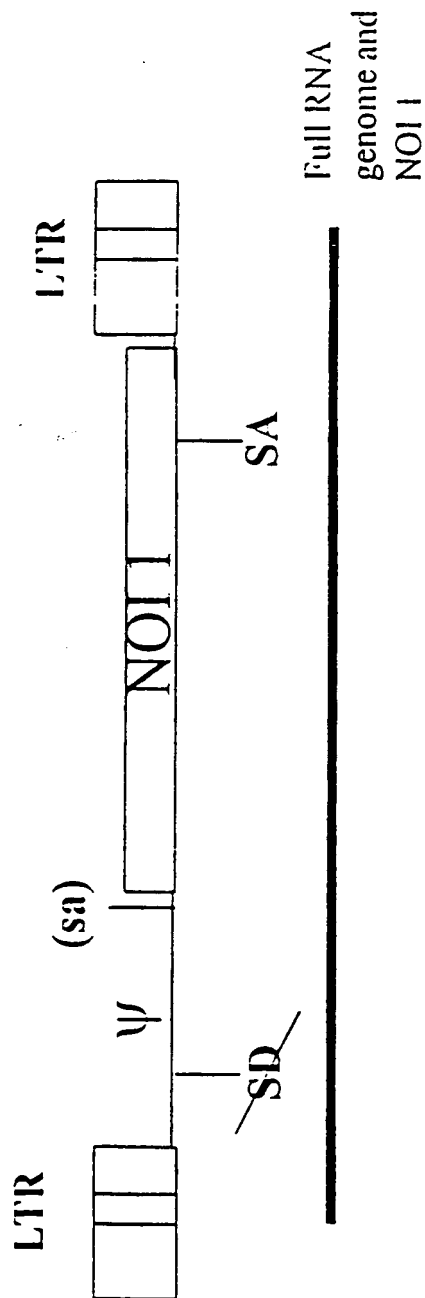
e.g. MFG

SD = Splice donor  
SA = Splice acceptor  
(sa) = cryptic splice acceptor  
ψ = packaging site  
~~SA~~ = non functional splice acceptor



e.g pBABE

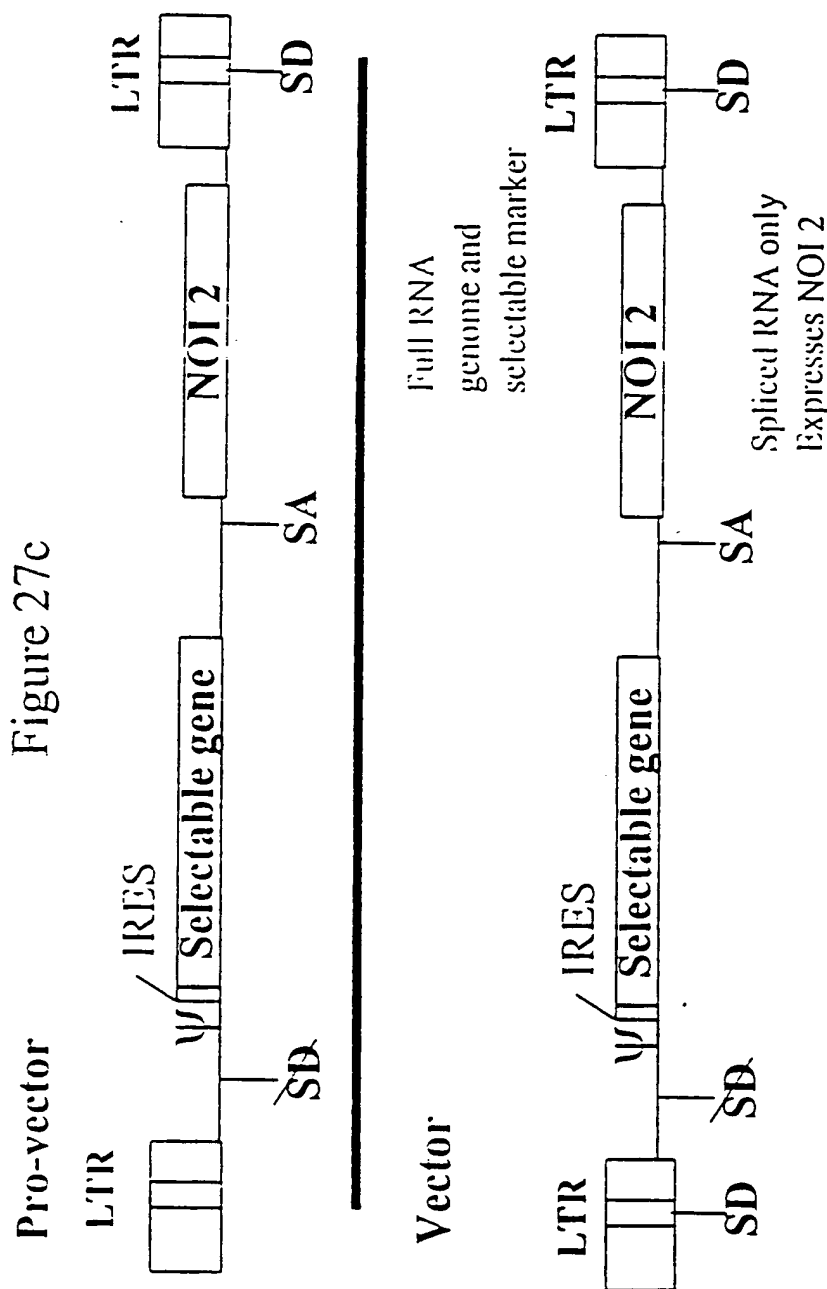
Figure 27b cont



SD = Non functional splice donor  
 SA = Splice acceptor  
 (sa) = cryptic splice acceptor  
 $\psi$  = packaging site

32/34

Figure 27c

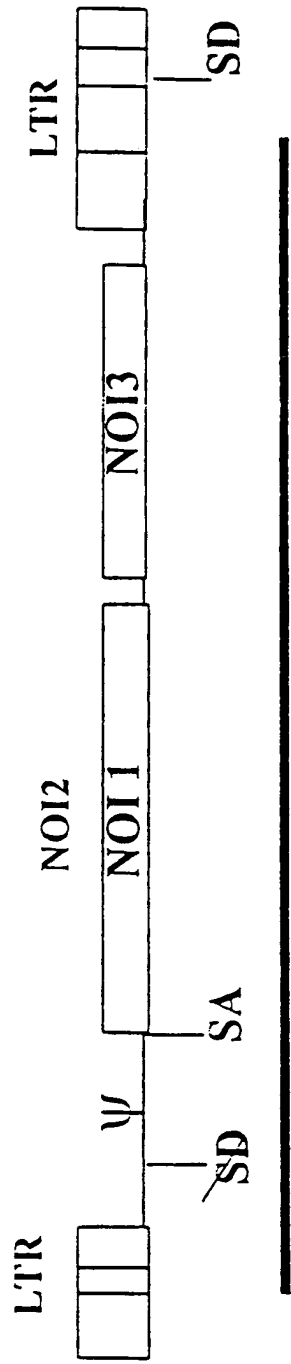


SD = Splice donor  
 SD = non functional splice donor  
 ψ = packaging site  
 SA = Splice acceptor  
 (sa) = cryptic splice acceptor  
 IRES = internal ribosome entry site (optional)



Figure 27c cont.

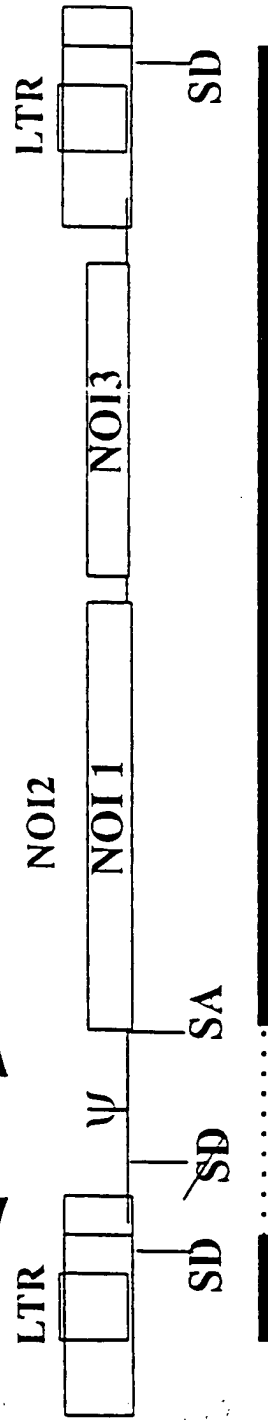
Pro-vector



Full RNA  
No genes expresses

Vector

NOI 1  
↔



Spliced RNA  
Functional NOI 1  
expressed

Figure 28

